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August Torrents Pallach

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EXAMINER

STEELE, JENNIFER A

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/804,556
Filing Date: March 19, 2004
Appellant(s): PALLACH ET AL.

Davidson, Davidson & Kappel, LLC
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/25/2007 appealing from the Office action mailed 9/27/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

NEW GROUND(S) OF REJECTION

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. Examiner is presenting new grounds of rejection and Claim 1 is now included in the 35 USC 102/103 rejection with respect to Utsumi. Claims 1 and 16 - 18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Utsumi (US 2005/0249931).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

EP 1,069,232	Costantino et al.	1-2001
5,645,926	Horrocks	7-1997
5,217,799	Sumii	6-1993
GB 1,054,877	Reinhard	1-1967
2005/0249931	Utsumi	11-2005

Lui et al. "Phosphorus-Containing Epoxy for Flame Retardant: Synthesis, Thermal, and Flame-Retardant Properties" Journal of Applied Polymer Science, Vol. 61, pages 613-621, 1996.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.) Claim 1-6 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Constantino et al (EP 1,069,232).

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Costantino is directed to a composition for making textile fireproof (Title).

As to claims 1 and 3 - 4, Costantino teaches a flame-resistant additive for textile materials in particular microfiber non-woven fabrics comprising a mixture of a fireproofing component and a binder comprising an aqueous dispersion of an acrylic or maleic polymer or copolymer and a multifunctional cross-linker of the acrylic or maleic polymer or copolymer (Abstract). Costantino notes that particularly good results have been obtained with the copolymer of acrylic acid and styrene (page 4, [0030]).

Costantino teaches that the composition can be applied to the non-woven by means of a transfer roller where a roller is partially immersed in the suspension of the additive from the lower part toward the top onto the back face of the material (page 5, [0047]).

The Examiner submits that the composition would at least partially saturate the non-woven fabric and thus bind at least a portion of the fibers together. It should be noted that the recitation of "engine compartment lining cover layer" is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity. The burden is shifted upon the Applicant to evidence the contrary.

As to claim 2, Costantino teaches that the binder is cross-linked (pg. 4[0031]).

As to claim 5, Costantino teaches incorporating a fireproofing component comprising melamine and melamine cyanide and a clay or other adsorbent material (page 3, [0022]).

As to claim 8, Costantino teaches that the non-woven fabric can comprise polyester (pages 1 and 5).

As to claims 1 and 2, although Costantino does not explicitly teach the claimed binder has thermoplastic behavior in the temperature range of 20 - 200° C and a thermosetting behavior above 200 C as required by claim 1 and a binder is pre-crosslinked at a temperature of up to 200°C and cures at a temperature above 200°C as required by claim 2, it is reasonable to presume that the claimed properties are inherent to Costantino. Support for said presumption is found in the use of like materials (i.e. a binder comprising a copolymer of acrylic acid and styrene and a cross-linker), which would result in the claimed property. The burden is upon the Applicant to prove otherwise. In re Fitzgerald 205 USPQ 594. In addition, the presently claimed properties would obviously have been present once the Costantino product is provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977).

2.) Claims 1, 3 - 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Horrocks et al. (US 5,645,926). Horrocks is directed to fire and heat resistant materials (Title) suitable for protective and barrier fabric structures such as transport upholstery barriers (column 1, lines 10- 20). As to claims 1 and 3 - 4, Horrocks teaches creating a web of VISIL fiber, covering the web with a single layer of sheath fabric and needle-punching both sides of the web. Horrocks notes that intumescent powder and bonding resin are added to the web before needling takes place (column 8, lines 10-20). Horrocks teaches that the intumescent

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powder comprises AMGARD MPC 1000 (ammonium polyphosphate) and the resin is REVACRYL 272 (acrylic and styrene/acrylic copolymer water based dispersions) (column 8, lines 15 - 30). It should be noted that the recitation of "engine compartment lining cover layer" is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity. The burden is shifted upon the Applicant to evidence the contrary.

As to claim 5, Horrocks teaches incorporating an intumescent agent (column 8, lines 10 - 20); the Examiner equates this to Applicant's "flame retardant, agent".

As to claim 6, Horrocks teaches that the intumescent agent or flame retardant may comprise PYROVATEX (column 6, lines 55 - 70). According to Horrocks in column 10, lines 15 - 30, PYROVATEX CP are a phosphorus and nitrogen-containing flame retardant. Additionally, Horrocks teaches that the phosphorus-based flame retardant may comprise ammonium polyphosphate (column 6, lines 55 - 65) whose generic formula is known in the art to be $[\text{NH}_4\text{PO}_3]_n$. As shown by the formula, ammonium polyphosphate contains both phosphorus and nitrogen. Although Horrocks does not explicitly teach the claimed binder has thermoplastic behavior in the temperature range of 20 - 200°C and a thermosetting behavior above 200°C as required by claim 1, it is reasonable to presume that the claimed properties are inherent to Horrocks. Support for said presumption is found in the use of like materials (i.e. a binder comprising a copolymer of acrylic acid and styrene), which would obviously have been present once

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the Horrocks product is provided. Note *In re Best*, 195, USPQ at 433, footnote 4 (CCPA 1977).

3.) Claims 1, 3 - 4, 8 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sumii et al. (US 5,217,799). Sumii is directed to surface materials for interior materials of cars (Title). As to claims 1 and 3 - 4, Sumii teaches a needle-punched felt impregnated with a synthetic resin emulsion (Abstract). Sumii teaches that the synthetic resin emulsion comprises a solid component composed of a synthetic resin having a melting temperature of 100 - 180 degrees C such as styrene-acrylic resin emulsions (column 3, lines 1 - 15). It should be noted that the recitation of "engine compartment lining cover layer" is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity. The burden is shifted upon the Applicant to evidence the contrary.

As to claim 8, Sumii teaches that the needle-punched felt can comprise polyester, polyamide and other synthetic fibers (column 2, lines 25 - 40).

As to claim 10, Sumii teaches that a hot-melt fiber web is formed on the synthetic resin emulsion impregnated surface of the needle-punched felt (column 3, lines 45 - 60). The web comprises fiber such as polyolefin (column 3, lines 45 - 64). The web can have a form of a film (column 3, lines 63 - 67). The Examiner equates the hot-melt fiber web to Applicant's "coating".

Although Sumii does not explicitly teach the claimed binder has thermoplastic behavior in the temperature range of 20 - 200°C and a thermosetting behavior above 200°C as required by claim 1, it is reasonable to presume that the claimed properties are inherent to Sumii. Support for said presumption is found in the use of like materials (i.e. a binder comprising a copolymer of acrylic acid and styrene), which would result in the claimed property. The burden is upon the Applicant to prove otherwise. In re Fitzgerald 205 USPQ 594. In addition, the presently claimed properties would obviously have been present once the Sumii product is provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977).

4.) Claims 1 - 4 and 8 - 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over GB 1,054,877.

GB 1,054,877 is directed to a self-extinguishing bonded non-woven fabric (Title). As to claims 1 - 4, GB 1,054,877 teaches a non-woven fabric bonded with a binding agent based on acrylic esters and/or butadiene (page 1, lines 20 - 30 and 40 - 50). GB 1,054,877 teaches that the polymers may comprise reactive groups which have a crosslinking effect under the influence of heat and/or catalysts (page 1, lines 54 - 56). It should be noted that the recitation of "engine compartment lining cover layer" is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity. The burden is shifted upon the Applicant to evidence the contrary.

As to claim 8, GB 1,054,877 teaches that the nonwoven fabric can comprise fibers such as cotton, rayon, polyester, polyamides, polyacrylonitrile, etc. (page 1, lines 30 - 40).

As to claim 9, GB 1,054,877 teaches that the nonwoven fabrics based on polyamides or polyesters are bonded with binder that is twice to four times the weight of the nonwoven and fabrics based on cotton or rayon are bonded with a binder that is once to twice the weight of the nonwoven (page 2, lines 30 - 45). The fabric in the Examples is 50 grams per square meters, which meets the mass per unit area as required by Applicant.

As to claims 1 and 2, although GB 1,054,877 does not explicitly teach the claimed binder has thermoplastic behavior in the temperature range of 20 - 200 C and a thermosetting behavior above 200°C as required by claim 1 and a binder is pre-crosslinked at a temperature of up to 200°C and cures at a temperature above 200°C as required by claim 2, it is reasonable to presume that the claimed properties are inherent to GB 1,054,877. Support for said presumption is found in the use of like materials (i.e. a binder comprising a copolymer of acrylic acid and butadiene), which would result in the claimed property. The burden is upon the Applicant to prove otherwise. In re Fitzgerald 205 USPQ 594. In addition, the presently claimed properties would obviously have been present once the GB 1,054,877 product is provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977).

5.) Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horrocks et al. (US 5,645,926) in view of the article entitled "Phosphorus-Containing Epoxy for

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Flame Retardant: Synthesis, Thermal, and Flame-Retardant Properties” by Liu, et al. Horrocks teaches that the phosphorus-based flame retardant may comprise ammonium polyphosphate (column 6, lines 55 - 65) whose generic formula is known in the art to be $[\text{NH}_4\text{PO}_3]_n$. Horrocks fails to teach the exact content of nitrogen and phosphorus where the elemental content of nitrogen is equal to or greater than 10% and the elemental content of phosphorus is greater than or equal to 5%.

Liu et al. is directed to flame-retardant resins (Title). Liu et al. teaches that there is a synergistic effect between phosphorus and nitrogen in flame retardancy. Liu teaches that high nitrogen content along with high phosphorus content help enhance the char yield and the LOI value as well as the flame retardance of the resin (page 620). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a high content phosphorus and high content nitrogen flame retardant agent as suggested by Liu in the material of Horrocks motivated by the desire to enhance the char yield, LOI value and the flame retardance of the substrate.

Horrocks in view of Liu fail to disclose that the flame retardant has nitrogen content of equal to or greater than 10% by weight and phosphorus content of equal to or greater than 5% by weight. However, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of nitrogen and phosphorus based on the desired char yield, LOI value and level of flame retardancy since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 220 F.2d 454 USPQ 233 (CCPA

1955). In the present invention, one would have been motivated to optimize the phosphorus and nitrogen content to tailor the level of flame retardancy based on desired level of char yield and LOI value.

NEW GROUND(S) OF REJECTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6.) Claims 1 and 16 - 18 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Utsumi (US 2005/0249931). Utsumi is directed to a nonwoven fabric laminate and automotive internal trim panel (Title). As to claims 1, 16 - 18, Utsumi teaches a laminate comprising a rigid layer of an entanglement-based nonwoven fabric and a bulky layer of a bulky nonwoven fabric (Abstract). Utsumi teaches that the rigidity of the nonwoven fabric laminate can be enhanced by using a binder such as a styrene-acrylonitrile-butadiene copolymer or a styrene-acrylic acid ester-acrylonitrile copolymer (page 6 [0057]) The nonwoven layers may comprise binder fibers and other fibers such as wool (page 4, [0031]) (page 6, [0053]). It should be noted that the recitation of "engine compartment lining" and "engine compartment lining cover layer" are not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on

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record to evidence that the prior art product could not function in the desired capacity.

The burden is shifted upon the Applicant to evidence the contrary. Additionally, the limitation of "reclaimed" wool is not given patentable weight because the act of reclaiming the wool does not have an impact on the final product as claimed. Likewise, the form of the binder (i.e. foam) which would be dried in the final product does not have an impact on the final product as claimed.

Utsumi does not explicitly teach the claimed binder has thermoplastic behavior in the temperature range of 20 - 200°C and a thermosetting behavior above 200°C as required by claim 1, it is reasonable to presume that the claimed properties are inherent to Utsumi. Support for said presumption is found in the use of like materials (i.e. a binder comprising a styrene-acrylonitrile-butadiene copolymer or a styrene-acrylic acid ester-acrylonitrile copolymer) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. In re Fitzgerald 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Utsumi product is provided. Note In re Best, 195 USPQ at 433, footnote 4 (CCPA 1977).

(10) Response to Argument

Costantino – Rejection of Claim 1 to 6 and 8

The Appellant is claiming an engine compartment lining cover layer comprising: at least one binder-bonded nonwoven engine compartment lining cover layer, the nonwoven layer being bonded using a binder having a thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C.

Appellant states that Costantino discloses “the product being treated for fireproofing is subjected to heating to dry the product and ensure the cross-linking of the binder” and thus Costantino provides an entirely cross-linked binder. Appellant’s claim 1 recites a nonwoven layer bonded using a binder having a thermoplastic behavior and a thermosetting behavior above 200°C.

As to Appellants argument that Costantino provides an entirely cross-linked binder, Costantino teaches a binder that crosslinks at a temperature compatible with the stability of the textile. A thermoset is a polymer material that unlike a thermoplastic polymer requires a chemical reaction to cross-link and become cured. The characteristic behavior of a thermoset is that their processing includes the chemical reaction process of cure and crosslinking. Wherein Costantino teaches a multifunctional crosslinking binder of acrylic and styrene copolymer but does not teach the property of thermosetting or thermoplastic behavior, it is reasonable to presume that the claimed properties are inherent in the structure of Costantino. Appellant argues Costantino employs an entirely crosslinked binder. This argument is not commensurate with the scope of as the claims do not recite a degree of crosslinking and the claims do not recite a specific composition of crosslinking and non-crosslinking binder.

Appellant argues that the Costantino binder does not thermoset. As to Appellants argument that the Costantino binder does not thermoset, the claims as disclosed recite a nonwoven layer being bonded using a binder with a thermosetting behavior above 200°C. This argument is not commensurate with the scope of the claims. Appellant states that thermosetting occurs via a crosslinking process and when

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fully cross-linked or cured, a thermoset plastic is in a strong form, for example a molded shape such as an engine compartment. Costantino does not teach a thermosetting behavior at a specific temperature, Costantino teaches a crosslinking binder and does not disclose at what temperature that crosslinking binder is crosslinked and does not disclose whether the binder is partially or fully crosslinked. Crosslinked resins systems are known in the art to include acrylic acid and acrylic ester polymers as claimed in the current invention and taught by Costantino.

Appellants argue that the fabric of Costantino is a flexible leather-like fabric and this structure is not that of Appellants. Appellants cite paragraph [0017] in the Appellants specification which provides notation of a molded shape such as an engine compartment that is a three-dimensional shaping process at temperatures higher than 200°C. The characteristics of a thermoset do not mean that the form of the final product is a molded shape or a strong form. Wherein the strength and form of the final product may be dependent on thickness, shape and material, a thermosetting behaving material can still be a flexible leather like sheet as taught by Costantino and be crosslinked. This argument is not commensurate with the scope of the claims. Appellants do not claim a molded part of specific structural definition and dimension, Appellants claim a nonwoven layer with a binder exhibiting thermosetting behavior over 200°C.

Costantino – Rejection of Claim 2 Argued Separately

Appellant argues that Costantino does not disclose a teaching with respect to claim 2 that “the binder condenses upon crosslinking and is pre-crosslinked at the temperature of up to 200°C and cures at a temperature above 200°C”. The term

condenses is equated with a condensation polymerization reaction wherein polymer is produced from monomer. This claim limitation is drawn to the process of producing the product and therefore it should be noted that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or an obvious variant from a product of the prior art, the claim is unpatentable even though a different process made the prior product. In re Thorpe, 227 USPQ 964,966 (Fed. Cir. 1985). The burden has been shifted to the Applicant to show unobvious differences between the claimed product and the prior art product. In re Marosi, 218 USPQ 289,292 (Fed. Cir. 1983).

Costantino – Rejection of Claim 5 Argued Separately

Appellant argues Costantino fails to disclose a flame retardant agent, water repellent agent and/or oil repellent agent as disclosed in Claim 5. As noted in the Office Action of 9/27/2006, Costantino teaches incorporating a fireproofing component comprising melamine and melamine cyanide and a clay or other adsorbent material (page 3, [0022]). Melamine is known in the art to be fire resistant and Costantino is disclosing its use as a fireproofing component.

Horrocks et al. – Rejection of Claims 1 and 3-6

Appellants argue the 35 USC 102(b) rejection as anticipated by or, in the alternative, under 35 USC 103(a) rejection as obvious over Horrocks by stating that

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Horrocks disclosed a charred fiber structure for protective clothing and the composite material was heated to 120°C for 5 minutes to enable bonding of the intumescent/resin combination to the fibers. Appellants argue that Horrocks does not disclose a thermosetting behavior above 200°C and that flexibility remains until charring.

As to Appellants argument that Horrocks invention is flexible and the Appellants is not, as stated in the paragraph above, flexibility of a material does not exclude a material from being a thermoset. Appellants claim a binder with a thermosetting behavior over 200°C. The claims, as written do not recite a thermoset material and do not recite a flexible material.

As to Appellants arguments that Horrocks does not teach or disclose an engine compartment lining cover layer, the recitation of “engine compartment lining cover layer” is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity.

Appellants argue that Horrocks does not teach or show a “binder having a thermoplastic behavior in the temperature range of 20°C to 200°C and a thermosetting behavior above 200°C”. However, Horrocks employs a binding resin of acrylic and styrene/acrylic copolymer resin, (trade name REVACRYL 272), in a web of VISIL fibers. Horrocks is teaching that the material employs a binder and this binder is known in the art to be a crosslinking binder. Horrocks teaches the structure and materials of the current application and therefore it is presumed that the properties of thermosetting

behavior and thermoplastic behavior are inherent in the material of Horrocks and therefore Horrocks anticipates the Appellant's invention.

Horrocks et al. – Rejection of Claim 5 Argued Separately

Appellants argue that Horrocks does not disclose “the binder contains flame retardant agents, water repellant agents, and/or oil repellant agents”, Horrocks cites use of AMGARD MPC 1000 (ammonium polyphosphate) which is a flame retardant agent.

Sumii et al. – Rejection of Claims 1,3,4,8 and 10

Appellants argue the rejection of Claims 1,3,4,8 and 10 with respect to Sumii et al. and state that Sumii discloses “The emulsion impregnated surface of the obtained non-woven fabric is laminated on web composed of a fiber made of a co-polymer of nylon-6, nylon-6,6 and nylon-12 and is heated to 110°C to bond the non-woven fabric and the web.” Appellant argues that Sumii does not disclose a binder having thermoplastic behavior in the temperature range of 20-200°C and thermosetting behavior above 200°C as it appears to bond at 110°C and have shape stability. Appellants state that the material is no longer thermoplastic above the bonding temperature, 110°C.

As to Appellants arguments that Sumii does not disclose a binder having the properties of Appellants claims¹, it is noted that while Sumii does not teach the properties of thermoplastic behavior and thermosetting behavior, Sumii does teach the structure and materials of the Appellant's invention as stated in claims 1, 3, 4, 8 and 10. Sumii teaches an emulsion binder of styrene-acrylic resins that are impregnated into

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polyester, polyamide, polyolefin fibers (col.3, lines 46-62) and heated to bond the material. Sumii does not teach crosslinking, Sumii teaches a styrene acrylic resin which are known in the art to be crosslinking resins. Sumii teaches the structure and materials of the current application, and therefore, it is presumed that the properties of thermosetting behavior and thermoplastic behavior are inherent in the material of Sumii, and therefore, Sumii anticipates the Appellant's invention.

As to Appellant's argument that the material of Sumii is no longer thermoplastic above the bonding temperature, 110°C, and has shape stability, it is noted that Sumii does teach a binder in a fibrous mixture that requires bonding in the temperature range of 110°C to 150°C which is in the range of the claimed invention. The reference in Sumii refers to the properties of shape stability and abrasion resistance and but does not refer to the property of thermoplastic behavior and therefore the conclusion that Sumii teaches a material that is no longer thermoplastic above 110°C is not conclusive. A material exhibiting thermoplastic behavior will bond, i.e. become more plastic or molten at its softening/melting point and then when cooled will solidify. However that property does not mean that if subjected to higher heat, the material would not exhibit thermosetting behavior. Sumii has the same structure and materials as the claimed invention and therefore it is reasonable to presume the material would behave the same as the claimed invention. Shape stability is not equated with thermosetting or thermoplastic behavior and shape stability is not a claim limitation of the current application. Also, this argument is not commensurate with the scope of the claims, since the claims do not recite shape stability. Sumii teaches the structure and

materials of the Appellants claims 1,3,4,8 and 10 and therefore it is reasonable to conclude that the properties of thermoplastic and thermosetting behavior are inherent in the material of Sumii and Sumii anticipates or renders obvious the Appellants invention.

Reinhard et al. – Rejection of Claims 1 to 4, 8 and 9

Appellant's argument that the material does not thermoset is not persuasive. Appellants argue that Reinhard et al discloses a self-extinguishing bonded nonwoven carded fleece and does not disclose a thermosetting behavior above 200°C. However, Reinhard teaches bonded nonwoven fabrics that are bonded by means of polymers based on acrylic ester and/or butadiene polymers. These polymers used as binders may contain reactive groups, which have a crosslinking effect under the influence of heat and/or catalysts (col. 2, lines 54-57). A crosslinking binder is equated with a thermosetting binder and therefore Reinhard discloses thermosetting binders. Further, Appellant is claiming a material with a thermosetting behavior and not a thermoset material. Appellant's argument that the material of Reinhard does not thermoset is not commensurate with the scope of the claims.

Appellant's argument that the fabric of Reinhard remains flexible is not commensurate with the scope of the claims. Appellants are not claiming a flexible material. As stated in the paragraphs above, a crosslinked material can be a flexible material and is not limited to a rigid plastic component. Appellant's argument that the material remains flexible is not commensurate with the scope of the claims.

Appellants argument that Reinhard does not teach or disclose an engine compartment lining cover is not given patentable weight at this time since the prior art meets the structural and /or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity.

Appellants argue that Reinhard does not show or teach a "binder having a thermoplastic behavior in the temperature range of 20-200°C and a thermosetting behavior above 200°C." However, Reinhard teaches bonded nonwoven fabrics that are bonded by means of polymers based on acrylic ester and/or butadiene polymers. These polymers used as binders may contain reactive groups, which have a crosslinking effect under the influence of heat and/or catalysts (col. 2, lines 54-57). Reinhard teaches the fabric is dried for three minutes at 110°C and for another three minutes at 150°C. This would implicitly state that the material is cured, crosslinked or partially crosslinked at or above 110°C and 150°C. However, while Reinhard teaches crosslinking resin systems and drying, Reinhard does not teach that the drying is the crosslinking process and therefore drying cannot necessarily be equated with curing and crosslinking. Reinhard teaches the structure, materials and drying temperatures in the range of the claimed invention. Reinhard does not teach the property of a thermoplastic behavior between 20-200°C and a thermosetting behavior above 200°C. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has

basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112- 2112.02

Reinhard et al. – Rejection of Claims 2 Argued Separately

Appellants argue Reinhard does not teach a binder that meets the limitations of claim 2. However, Reinhard teaches acrylic acid esters which are polymerized by condensation polymerization and therefore would meet the limitation of a binder that condenses upon crosslinking.

Utsumi – Rejection of Claims 16-18

Appellants argue that Utsumi shows thermoplastic and rigid behavior in the range of 20-200°C and therefore does not teach to claim 1 and 16. Appellants state that Utsumi discloses a laminate of nonwoven fabrics and discloses one or more rigid layers wherein the rigid layer is passed through a calendar at ordinary temperature and at elevated temperature of 100°C, 150°C and 180°C. However, the examiner asserts that calendaring the layers could be to soften/melt the layers and at these temperatures of 100-180°C and therefore displaying thermoplastic behavior in this temperature range. Utsumi does not explicitly teach the claimed binder has thermoplastic behavior between 20- 200°C and thermosetting behavior above 200°C; it is reasonable to presume that the claimed properties are inherent to Utsumi. Utsumi does not disclose a thermosetting behavior or a thermoset material and does not explicitly state that the binders are crosslinking binders. Utsumi teaches styrene-acrylic acid ester copolymer binders that are known in the art to be crosslinking. Utsumi teaches the structure, materials and

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processing temperatures in the range of the claims and therefore the thermoplastic and thermosetting behavior of that is considered to be an inherent property. To the extent that a crosslinking or cure process occurs over a range of temperatures and the Appellant is claiming a thermoplastic behavior occurring in that range of temperatures, Examiner maintains that the Utsumi anticipates or renders obvious the Appellants invention. The burden is on the Appellant to show otherwise.

Appellant's argument that the material is of Utsumi is rigid below 200°C is considered to be equating rigid behavior with thermosetting behavior. Utsumi teaches a "binder bonding method wherein the stacked fiber web is bonded with a binder such as an emulsion or latex binder such as a styrene-acrylic acid ester-acrylonitrile copolymer, a styrene-acrylonitrile-butadiene or a styrene-butadiene rubber. Utsumi teaches rigidity and teaches rigidity can be enhanced by the thickness in addition to the function of the rigid layers" [0059]. The claims do not disclose a rigid material and therefore the argument is not commensurate with the scope of the claims.

As to Appellants arguments that Utsumi does not teach or disclose an engine compartment lining cover layer, the recitation of "engine compartment lining cover layer" is not given patentable weight at this time since the prior art meets the structural and/or chemical limitations set forth and there is nothing on record to evidence that the prior art product could not function in the desired capacity.

Utsumi – Rejection of Claims 17: Argued Separately

Appellants argue Claim 17 is not anticipated or rendered obvious over Utsumi because Utsumi discloses wool and not reclaimed wool. Examiner equates wool with

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reclaimed wool and in the absence of a showing that wool and reclaimed wool are in fact different materials structurally or have different properties, this argument is not persuasive.

Utsumi – Rejection of Claims 18: Argued Separately

Appellants argue Claim 18 is not anticipated or rendered obvious over Utsumi because Utsumi does not disclose a foam binder. The examiner disagrees because Utsumi does disclose alternative starting materials to form the shape of the disclosed invention including plastic foam, a resin felt of a thermosetting resin, a corrugated board, a plastics plate. With respect to Appellants statement that it is not true that the binder form does not affect the product and there is no motivation to modify the reference, the 35 USC 102(e) rejection over Utsumi does not require motivation. The Utsumi reference teaches foam and therefore the use of foam is known in the art.

Horrocks et al., in view of Lui et al – Rejection of Claim 7 Argued Separately

Appellants argue the 35 USC 103(a) rejection of Claim 7 with respect to Horrocks in view of Liu. Appellants state that neither Horrocks nor Liu teach or disclose an engine compartment lining cover layer and in fact the uses disclosed in Horrocks would not lead one of skill in the art to use them as engine compartment linings and therefore there is no reason or motivation for one skilled in the art to combine the Liu with Horrocks. The examiner disagrees. An engine compartment lining is a statement of use and does not distinguish the current invention from prior art. Liu is relied upon for teaching flame-retardant resins and the synergistic effect between phosphorus and

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nitrogen in flame retardancy. Horrocks teaches a phosphorus-based flame retardant may comprise ammonium polyphosphate. Horrocks in view of Liu teach the limitations of Claim 7 and with respect to Applicant's arguments that there is no suggestion of motivation to combine, the rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) Reopen prosecution. Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be

relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Elizabeth M. Cole/

Primary Examiner Art Unit 1771

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

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/Kathryn Gorgos/

Kathryn Gorgos

Training Quality Assurance Specialist, TC 1700

Conferees:

/Jennifer Michener/

Quality Assurance Specialist, TC1700

/Jennifer McNeil/

SPE 1775